

I. INTRODUCTION

Claims 1, 7, 8 and 10 have been amended, and claims 2-6 have been cancelled without prejudice. Accordingly, claims 1 and 7-12 are under consideration in the present application. Provided above, please find a claim listing indicating the claim amendments and current status of the claims on separate sheets so as to comply with the requirements set forth in 37 C.F.R. § 1.121. It is respectfully submitted that no new matter has been added.

II. REJECTION UNDER 35 U.S.C. § 112 SHOULD BE WITHDRAWN

Claim 2 is rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite. Specifically, the Examiner contends that claim 2 is indefinite because step (b) recites accelerated cooling whereas step (b) in claim 1 recites cooling naturally without an accelerated cooling procedure.

Claim 2 has been cancelled without prejudice. Accordingly, the 35 U.S.C. § 112, second paragraph rejection of claim 2 is moot, and Applicants respectfully request that it be withdrawn.

III. OBJECTIONS TO CLAIMS SHOULD BE WITHDRAWN

The Examiner objects to claims 1, 2, 7 and 8 because the claims are allegedly awkwardly recited. As the Examiner shall ascertain, claims 1, 2, 7 and 8 have been amended to clarify the subject matter recited therein.

In view of the above, Applicants respectfully request that the objections to the claims be withdrawn.

IV. REJECTIONS UNDER 35 U.S.C. § 102(b)/103(a) SHOULD BE WITHDRAWN

Claims 1, 4, 5, 7, 10 and 11 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Japanese Patent 590031824 (hereinafter “JP-824”) or Japanese Patent 60-251221 (hereinafter “JP-221”) or Japanese Patent 363114923 (hereinafter “JP-923”). Claims 6 and 12 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over JP-824 or JP-221 or JP-923. Claims 2, 3, 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over JP-824 or JP-221 or JP-923, in view of Japanese Patent 55002768 (hereinafter “JP-768”).

Applicants respectfully assert that JP-824, JP-221 and JP-923, taken individually or in combination with JP-768, fails to teach, suggest or disclose the subject matter recited in amended independent claim 1, and the claims which depend therefrom, for at least the reasons provided herein below.

In order for a claim to be rejected as anticipated under 35 U.S.C. § 102, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. Manual of Patent Examining Procedures, § 2131; *see also Lindman Maschinenfabrik v. Am Hoist and Derrick*, 730 F.2d 1452, 1458 (Fed. Cir. 1984).

“To reject claims in an application under Section 103, an examiner must show an un rebutted *prima facie* case of obviousness.” *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998). The Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated:

Under Section 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the

pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Indeed, to sustain a rejection under 35 U.S.C. § 103(a), there must be some teaching, other than the instant application, to alter the prior art to arrive at the claimed invention.

“The problem confronted by the inventor must be considered in determining whether it would have been obvious to combine the references in order to solve the problem.”

Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1998).

The objective standard for determining obviousness under 35 U.S.C. § 103, as set forth in *Graham v. John Deere, Co.*, 383 U.S. 1 (1966), requires a factual determination to ascertain: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; and (3) the differences between the claimed subject matter and the prior art. Based on these factual inquiries, it must then be determined, as a matter of law, whether or not the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the alleged invention was made. *Graham*, 383 U.S. at 17. Courts have held that there must be some suggestion, motivation or teaching of the desirability of making the combination claimed by the applicant (the “TSM test”). See *In re Beattie*, 974 F.2d 1309, 1311-12 (Fed. Cir. 1992). This suggestion or motivation may be derived from the prior art itself, including references or disclosures that are known to be of special interest or importance in the field, or from the nature of the problem to be solved. *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996).

Although the Supreme Court criticized the Federal Circuit’s application of the TSM test, see *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, (2007) the Court also indicated that the TSM test is not inconsistent with the *Graham* analysis

recited in the *Graham v. John Deere* decision. *Id.*; see *In re Translogic Technology, Inc.*, No. 2006-1192, 2007 U.S. App. LEXIS 23969, *21 (October 12, 2007). Further, the Court underscored that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR*, 127 S. Ct. at 1741. Under the precedent established in *KSR*, however, the presence or absence of a teaching, suggestion, or motivation to make the claimed invention is merely one factor that may be weighed during the obviousness determination. *Id.* Accordingly, the TSM test should be applied from the perspective of a person of ordinary skill in the art and not the patentee, but that person is creative and not an automaton, constrained by a rigid framework. *Id.* at 1742. However, “the reference[s] must be viewed without the benefit of hindsight afforded to the disclosure.” *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994).

The prior art cited in an obviousness determination should create a reasonable expectation, but not an absolute prediction, of success in producing the claimed invention. *In re O’Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988). Both the suggestion and the expectation of success must be in the prior art, not in applicant’s disclosure. *Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200, 1207 (Fed. Cir. 1991) (citing *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988)). Further, the implicit and inherent teachings of a prior art reference may be considered under a Section 103 analysis. See *In re Napier*, 55 F.3d 610, 613 (Fed. Cir. 1995).

Secondary considerations such as commercial success, long-felt but unsolved needs, failure of others, and unexpected results, if present, can also be considered. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538-39 (Fed. Cir. 1983). Although

these factors can be considered, they do not control the obviousness conclusion. *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

To establish obviousness, the prior art references must be evaluated as a whole for what they fairly teach and neither the references' general nor specific teachings may be ignored. *Application of Lundsford*, 357 F.2d. 385, 389-90 (CCPA 1966). A reference must be considered for all that it teaches, not just what purportedly points toward the invention but also that which teaches away from the invention. *Ashland Oil, Inc. v. Delta Resins & Refractories*, 776 F.2d. 281, 296 (Fed. Cir. 1985).

Amended independent claim 1 recites a rail manufacturing method, comprising (a) hot-rolling a billet into a form of a rail having a high temperature and b) after step (a), cooling the high-temperature rail to ambient temperature, wherein the rail is maintained in an upright position when a surface temperature at a head of the rail is in a temperature range of substantially 400 °C to 250 °C, and in which the rail is cooled naturally on a cooling bed without a use of both of an insulation and an accelerated cooling procedure, and the curvature of the rail in a vertical direction can be controlled through a weight of the rail.

JP-824, on the other hand, describes a cooling method of a rail in which the rail is insulated (heat insulation) by a steel plate or a blanket (See JP-824, Figs. 1 and 2). Amended independent claim 1 recites that the rail must be cooled naturally without insulation and an accelerated procedure. Further, JP-824 does not teach, suggest or disclose that the rail must be cooled naturally in the temperature range of substantially 400 °C to 250 °C, as recited in amended independent claim 1. JP-824 further fails to

teach, suggest or disclose that the curvature of the rail in a vertical direction can be controlled through a weight of the rail, as recited in amended independent claim 1.

JP-221 describes a method of a rail manufacturing process, in which there is no description of cooling in the temperature range of 600°C or lower (See JP-221, Fig. 1). In JP-221, there is no teaching, suggestion or disclosure that the rail must be cooled naturally in the temperature range of substantially 400 °C to 250 °C, as recited in amended independent claim 1. JP-221 further fails to teach, suggest or disclose that the curvature of the rail in a vertical direction can be controlled through a weight of the rail, as recited in amended independent claim 1.

JP-923 describes a cooling method of a rail, in which the rail can be maintained in an upright position while transported to a cooling apparatus. (See JP-923, Figs. 1-2). However, the rail in the cooling apparatus of JP-923 immediately begins to cool the head thereof, and subsequently cools the bottom thereof at a predetermined timing. JP-923 is completely devoid of any teaching, suggestion or disclosure that the rail is cooled naturally on a cooling bed without a use of both of an insulation and an accelerated cooling procedure, as recited in amended independent claim 1. JP-923 further fails to even mention, much less teach, suggest or disclose, that the curvature of the rail in a vertical direction can be controlled through a weight of the rail, as recited in amended independent claim 1.

JP-768 describes a rail manufacturing method, in which the rail is cooled in an accelerated cooling procedure in the temperature range of 400 to 250°C (See JP-768, Fig. 1). Accordingly, JP-768 does not cure the deficiencies of JP-824, JP-221 or JP-923 as set out above, and the Examiner does not contend that it does.

Regarding the 35 U.S.C. § 102(b) and § 103(a) rejections of the dependent claims, Applicant respectfully asserts that JP-824 or JP-221 or JP-923, individually or in combination with each other, in no way teach, suggest or disclose the explicit recitations of amended independent claim 1. Accordingly, the claims which depend from amended independent claim 1 are also patentable over the references relied upon by the Examiner at least because these publications fail to teach, suggest or disclose the recited features of amended independent claim 1.

Further, amended claim 7 recites that the rail is maintained in an upright position when a surface temperature at a head of the rail is in a temperature range of substantially 800 °C to 400 °C while the foot of the rail is mechanically restrained on the cooling bed by a clamp apparatus. JP-824, JP-221 and JP-923 all fail to teach, suggest or disclose this recitation of amended claim 7.

Therefore, for at least the reasons as presented herein above, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(b) rejection of claims 1, 4, 5, 7, 10 and 11 as being allegedly anticipated by JP-824 or JP-221 or JP-923, the 35 U.S.C. § 103(a) rejection of claims 6 and 12 as being allegedly unpatentable over JP-824 or JP-221 or JP-923, and the 35 U.S.C. § 103(a) rejection of claims 2, 3, 8 and 9 as being allegedly unpatentable over JP-824 or JP-221 or JP-923, in view of JP-768.

V. CONCLUSION

In light of the foregoing, Applicants respectfully submit that claims 1 and 7-12 are in condition for allowance. Prompt consideration, reconsideration and allowance of the present application are therefore earnestly solicited. If any issues remain outstanding, the Examiner is invited to contact the undersigned via the telephone number provided below.

Respectfully submitted,

Date: April 15, 2009

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